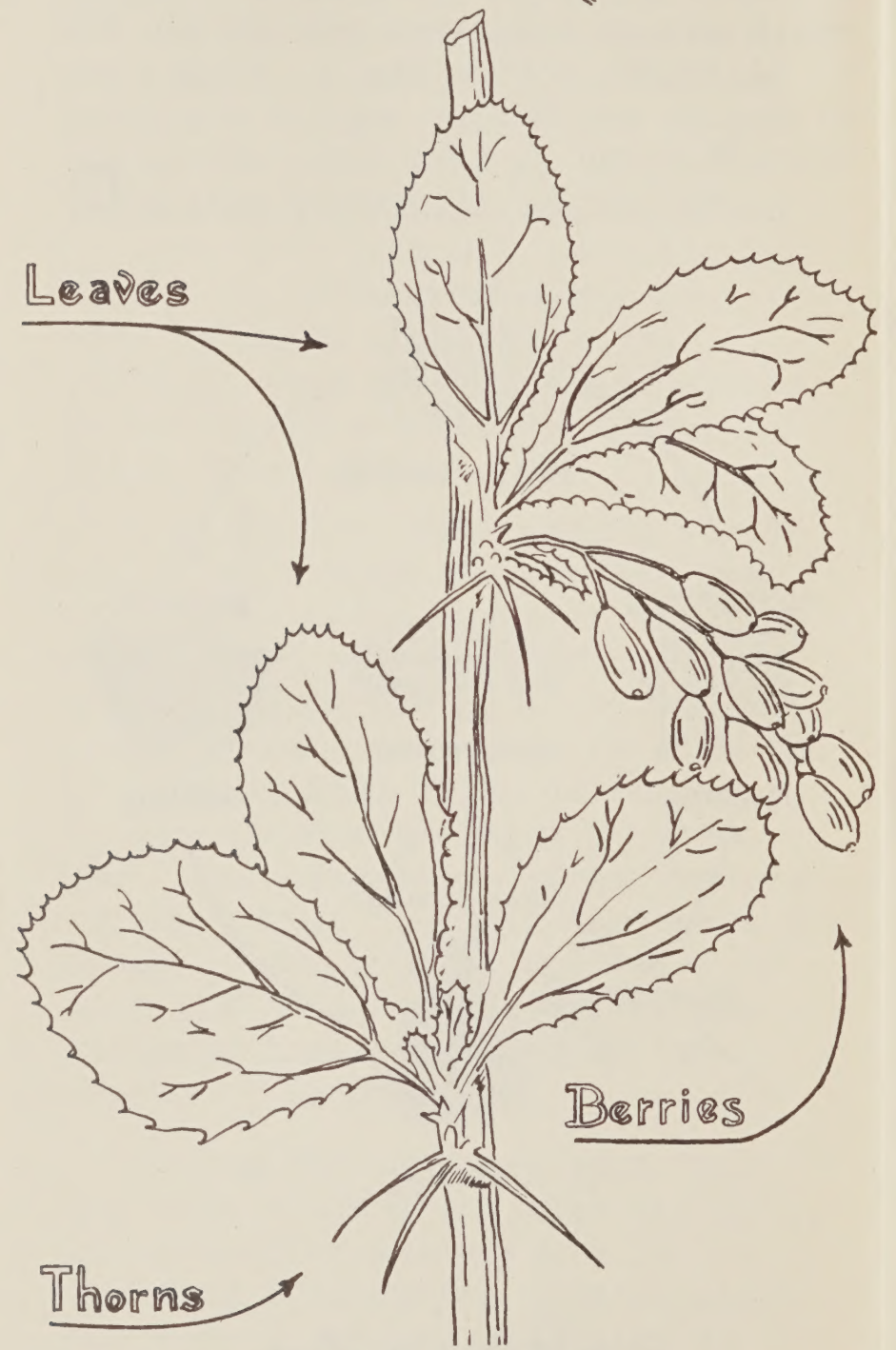
Barberry Eradication in Ohio

DESTROYING A COMMON BARBERRY WITH SALT

Learn to Identify the Rust-spreading Barberry



THE OUTER BARK is gray and the inner bark is yellow. The leaves have saw-toothed edges. The thorns are usually in groups of three. The bright red berries grow in clusters like currants.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Entomology and Plant Quarantine
Cooperating with
State Agricultural and Other Agencies
In the Eradication of the Common Barberry

Barberry Eradication Office
Post Office Building
Columbus, Ohio.

Dear Cooperator:

This circular briefly summarizes some important facts relating to the progress that has been made in the eradication of rust-spreading barberry bushes in Ohio.

To locate and destroy all barberries would be an impossible task without the assistance that is being given by property owners of the State. As you know, the common barberry and certain closely related species are the spring host plants for the fungus that causes stem rust of oats, wheat, barley, rye, and many native grasses.

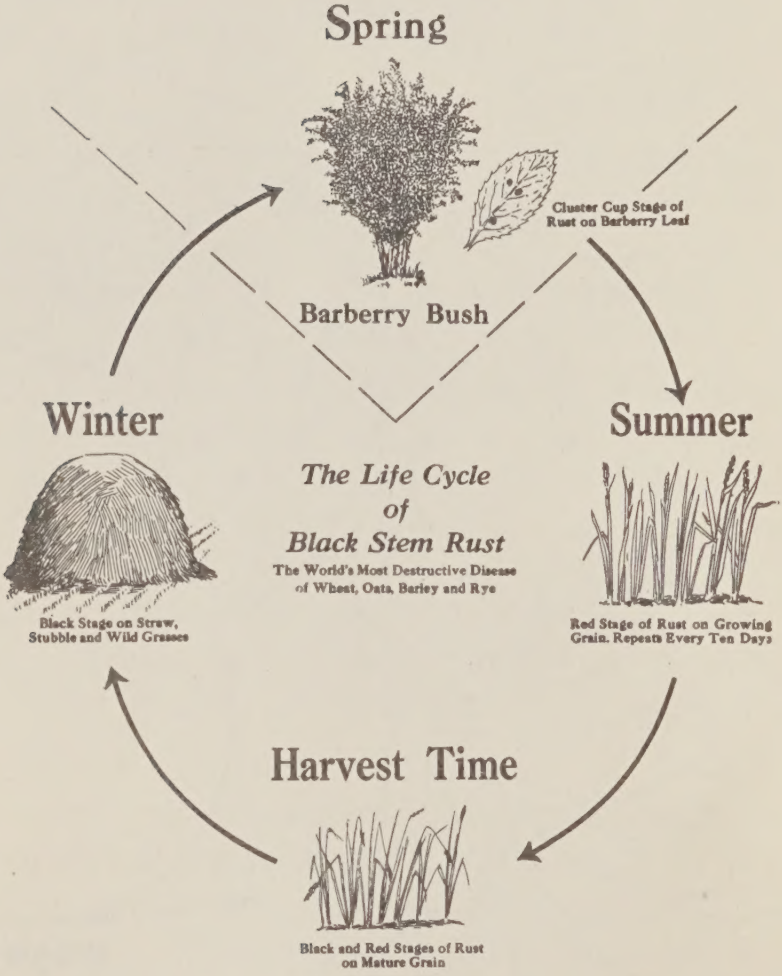
Do not destroy bushes that you think are rust-spreading barberries until you have sent a twig to the above address to be identified. Only certain kinds of barberry harbor rust, and every precaution should be taken to avoid destroying harmless bushes.

Very truly yours,

Harry Atwood

Associate Pathologist,
In Charge of Barberry Eradication
in Ohio

Stem Rust Caused by Fungus



THE TINY PARASITIC FUNGUS that causes stem rust of small grains lives for a time during the spring on the leaves of the common barberry, and during the remainder of the growing season on the leaves and stems of wheat, oats, barley, rye, and certain native grasses. The rust fungus steals its food from the growing plants with the result that the grain is shriveled, light-weight and otherwise injured for milling purposes.

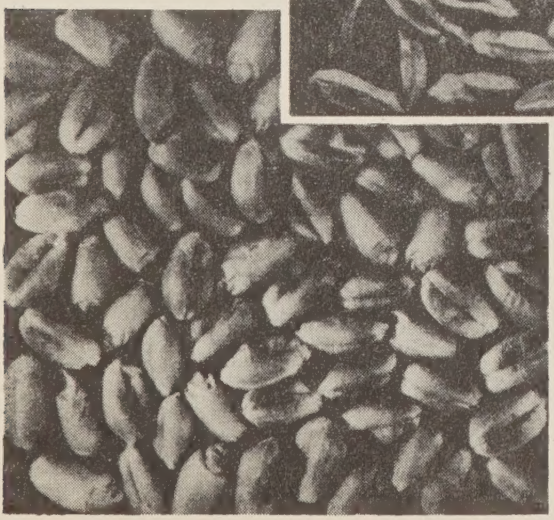
Rusted Fields Yield Poor Quality Grain

SHRIVELED, LIGHT-WEIGHT GRAIN of poor milling quality is produced in fields damaged by stem rust.

Wheat that should produce 20 or more bushels of high-quality grain to the acre often yields 6 to 8 bushels of light, shriveled grain because of stem rust injury.

Rust-shriveled grain is always discounted at the market. Every farmer knows that rust may make the difference between a profitable and an unprofitable crop.

THIS IS WHAT BLACK STEM RUST DOES TO WHEAT



PLUMP HEALTHY KERNELS FROM RUST-FREE WHEAT

Barberry Eradication Helps Control Rust

REMOVING BARBERRY BUSHES breaks the cycle of the rust, thus preventing the disease from transferring in the spring from the old straw and stubble to the new grain crops.

In 1660 France passed laws prohibiting the growing of common barberry bushes near grain fields. Since then similar laws have been enforced in Denmark, the Netherlands, Germany, Norway, and England.

In May 1726 the first law condemning the common barberry was passed in North America, but it was not until 1918 that an organized eradication movement was begun in the United States.

Barberry eradication is helping to lower the cost of producing grain by increasing yields per acre and by stabilizing the quality of the harvested product. Rust damage takes place just a few weeks before harvest, after the major cost of production has been incurred.

More than 3,000,000 rust-spreading barberry bushes have been destroyed in Ohio since 1918. Figures in the following table indicate the effect this work is having upon the annual losses caused by this disease.

History of Stem Rust in Ohio

EARLY RECORDS of the State Board of Agriculture show that stem rust was recognized as a limiting factor in wheat production in many parts of Ohio as early as 1846. In 1849 wheat yields are reported to have been reduced one-third by rust. In 1916 the disease became epidemic throughout the northern part of the United States resulting in tremendous losses to grain growers.

Observations made over a period of 20 years show that losses from stem rust in Ohio usually occur as a result of epidemics of stem rust developing in the vicinity of barberry bushes. There is on file the history of many cases of rust-spreading from barberry to grain, that have been reported by farmers of the State. In many instances a study of these local epidemics of rust led to the discovery of the barberry bushes serving as the source of inoculum.

During the 18 years that Ohio has been cooperating with the U. S. Department of Agriculture in the barberry eradication program there has been a gradual reduction in the amount of damage caused by stem rust, indicating that in all probability local barberry bushes are the most important source of stem rust inoculum in the State.

Losses from Stem Rust Decrease as Progress Is Made in Barberry Eradication

ESTIMATED WHEAT LOSSES resulting from black stem rust in Ohio in 5-year periods.

	Bushels
1918-22	3,280,000
Average annual loss ...	656,000
1923-27	1,525,000
Average annual loss ...	305,000
1928-32	1,670,000
Average annual loss ...	334,000
1933-36 (4 yrs.)	312,000
Average annual loss ...	78,000

RUST-SPREADING BARBERRY BUSHES destroyed since the beginning of the stem rust control program.

	Bushes
1918-22	415,669
1918-27	2,036,996
1918-32	2,316,355
1918-36	3,120,398

ESCAPED COMMON BARBERRY FOUND GROWING NEAR GRAIN FIELD IN OHIO

ANYONE WHO REPORTS A HARMFUL BARBERRY LENDS VALUABLE ASSISTANCE IN THE DRIVE TO REDUCE THE NUMBER OF STEM RUST OUTBREAKS.

Your report should be sent

to

BARBERRY ERADICATION OFFICE

ROOM 449, POST OFFICE BUILDING

COLUMBUS, OHIO

THE JAPANESE BARBERRY IS HARMLESS

DO NOT DESTROY IT.

Barberry Bushes Found in Every County in Ohio

SINCE 1918 when barberry eradication was first undertaken in Ohio, more than 3,120,000 rust-spreading bushes have been destroyed on nearly 16,000 different properties. Some control work has been conducted in every county in the State.

Many infested areas have been found in the Western Reserve territory and the Miami Valley. It was here that the pioneer settlers introduced the shrub. Here also the early nurseries were established and common barberry bushes were propagated and sold in large numbers. From the early plantings birds scattered the seed far and wide, with the result that bushes have been found growing wild in nearly every county in the State.

Small grains are an extremely important crop in Ohio, and at the beginning of the barberry eradication program nurserymen throughout the State cooperated in the control work by voluntarily destroying all rust-susceptible bushes growing in their nurseries. Had these bushes been permitted to grow unmolested, the increasing losses resulting from stem rust damage would have seriously jeopardized the production of small grains in this State.

Complete Eradication Is Important

A FURTHER REDUCTION in rust losses may be expected as more of the barberry bushes are destroyed. Plans for the future must provide for the reinspection of areas where eradication has been largely accomplished, otherwise reinfestation may result.

Many barberries are still to be found growing in out-of-the-way places, along stream banks, in fence rows, and in wooded areas, as well as some cultivated plantings. We must find and destroy these bushes and prevent the fruiting and spread of these destructive plants.

The cost of barberry eradication in Ohio is very low when compared with the resultant savings. The savings in 1936 alone exceeded the total cost of eradication in the State since the beginning of the program.

Every farmer, every school child, everyone interested in the agricultural development of the State should learn to know the barberry and help to destroy it. This bush has no place in grain-growing regions.

From 12 to 15 pounds of salt applied at the roots of an average-sized bush is sufficient to kill it.